

ABSTRACT

An in-line formed web having major surfaces in the X-Y plane and a depth in the Z direction is suitable for use as a composite fluid distribution and fluid retention layer in a disposable absorbent article. The web contains multiple layers of composite material which may have both thermoplastic fibers and absorbent material. The multiple layers can have different compositions of thermoplastic fibers and absorbent material as applied in-line by various arrangements of thermoplastic melt dies and absorbent fiber dispensers. By arranging at least two of the multiple layers in an opposing relation overlaid in the Z-axis direction of the web, a gradient can be formed in the Z-direction of the web. By coordinating the timing and deposition of the material onto a forming wire, at least one of the multiple layers is arranged to have zones of intermittent material deposition in at least one of a machine direction or a cross direction of the web. Thus the in-line formed composite web has a Z-direction gradient of air laid material layers and zones of different material layers intermittently placed in one of the machine direction or the cross direction and may be customized according to the specific need for a single composite structure having fluid intake, distribution and retention properties in an absorbent article.